

REMARKS

In the March 13, 2003 Office Action, claims 1, 4 and 7 were rejected under 35 USC 112, first paragraph and second paragraph, claims 7 and 11 were rejected under 35 USC 102(b), and claims 1, 2 and 5 were rejected under 35 USC 103(a). No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response, applicants have amended independent claim 1 and 11 to distinguish them from the prior art, canceled claims 2-7, and added new claims 12-15. Thus, claims 1 and 11-15 are pending, with claim 1 being the only independent claim. Reexamination and reconsideration of the pending claims are respectfully requested in view of the above amendments and the following comments.

Rejection of claims 1, 4, and 7 under 35 USC 112, first paragraph

Claims 1, 4, and 7 were rejected under 35 USC 112, first paragraph, because the specification allegedly failed to provide reasonable enablement for all carboxylic acids, amino acids and amino acid condensates known in the field of chemistry. Although the applicants respectfully disagree with the Examiner's opinion regarding whether the specification provides reasonable enablement for the claimed compounds, they have amended claim 1 to recite specific carboxylic acids, and amino acids and amino acid condensates disclosed in the specification, and have canceled claims 4 and 7. Thus, the applicants respectfully request that this rejection be withdrawn in view of this amendment.

Rejection of claims 1 and 7 under 35 USC 112, first paragraph

Claims 1 and 7 were rejected under 35 USC 112, first paragraph, because the term "reduction catalyst" is not found in the specification. In response, the applicants have replaced the term "reduction catalyst" with the word "catalyst" in claims 1 and 7. Thus, the applicants respectfully request that this rejection be withdrawn in view of this amendment.

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Rejection of claims 1 and 7 under 35 USC 112, second paragraph

Claims 1 and 7 were rejected under 35 USC 112, second paragraph, because the term "high-pressure" is allegedly vague and indefinite. Although the applicants respectfully disagree with the Examiner's opinion regarding whether this term is vague and indefinite, they have amended claim 1 and 7 to delete the term "high-pressure". Thus, the applicants respectfully request that this rejection be withdrawn in view of this amendment.

Rejection of claims 7 and 11 under 35 USC 102(b) as being anticipated by Madsen et al

Claims 7 and 11 were rejected under 35 USC 102(b) as being anticipated by Madsen et al (U.S. Patent No. 5,189,016). More specifically, it is alleged that Madsen et al discloses a glutaminyl-glycine dipeptide having a N-terminal amino acid that is identical with the reaction product recited in claims 7 and 11. In response, the applicants have canceled claim 7, and amended claim 11 so that it depends upon amended claim 1. As a result, claim 11 can no longer be read to claim a glutaminyl-glycine dipeptide having a N-terminal amino acid. Thus, the applicants respectfully assert that the Madsen et al reference does not anticipate claims 7 and 11, and respectfully request that this rejection be withdrawn.

Rejection of claims 1, 2 and 5 under 35 USC 103(a) as being unpatentable over Heins et al

in view of Goldberg

Claims 1, 2, and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,032,676 to Heins et al in view of Goldberg (a beginning chemistry text), on the grounds that the Heins reference describes a method of making N-polyhydroxyalkylamino acids by reacting uronic acids in alcohols, ethers or their mixtures with water with amino acids at a temperature between 50° to 100° C. The Office Action states that, although the Heins reference differs from the claimed invention in that the heating is carried out at 105° C or more and at a pressure above atmospheric pressure, it would have

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been obvious for one skilled in the art to have obtained the optimum temperature range and pressure for the process by routine experimentation.

In response, the applicants have canceled claims 2 and 5, and amended independent claim 1. Unlike with the disclosure of the Heins reference, the method recited in claim 1 is carried out in the absence of a catalyst. As can be seen on page 2, lines 1 to 13 of the present patent application, the claimed invention was created in response to a long felt need for a simple and expedient method of forming carboxylic acid and amino acid or amino acid condensate reaction compounds that can be safely employed in food product applications. In the past, these reaction compounds were formed in the presence of catalysts which were often toxic to humans, thus requiring scrupulous care in order to ensure that these toxic substances did not contaminate the end product. The present invention solves this long felt need by conducting this reaction in the absence of a catalyst, thus allowing the reaction products to be simply and inexpensively produced, and to be safely used in food products.

The applicants also respectfully disagree with the Examiner's view that the difference between the temperature at which the Heins process is carried out (50 to 100° C) and the temperature recited in amended claim 1 (greater than 105° C) are close enough that one skilled in the art would have expected them to have a similar reaction condition in the absence of unexpected results. Although it is generally true, as the Examiner pointed out, that temperature is well understood by those of ordinary skill in the art to be a result-effective variable, it is also true that an increase in temperature in an aqueous system beyond the boiling point (100° C) can result in the thermal destruction of the reactants and or the desired end product, as well as result in side reactions that will produce undesirable by-products.

This is of particular concern when producing food products (which the present invention is directed to), because these side reactions could potentially produce substances that are toxic

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to humans when ingested. Thus, one of ordinary skill in the art of food chemistry would not be motivated to simply increase the temperature and pressure of the reaction taught in the Heins reference to arrive at the invention recited in claim 1, because that person would be well aware of these concerns, and be well aware that the Heins reference is directed to cosmetic preparations and not food products. In sum, one of ordinary skill in the art would not be motivated to apply additional heat and pressure to the method disclosed in the Heins reference to arrive at the present invention.

Thus, the Heins reference clearly does not teach or suggest the claimed invention, and one skilled in the art would clearly not be motivated to modify the teachings in the Heins reference to arrive at the invention now recited in claim 1. In addition, because the Heins reference does not render the method of claim 1 obvious, it can neither render the claims dependent therefrom obvious. Thus, the applicants respectfully request that this rejection be withdrawn in view of the above comments and amendments.

Rejection of claims 1, 3-4 and 6-7 under 35 USC 103(a) as being unpatentable over van Pottelsberghe de la Potterie in view of Goldberg

Claims 1, 3-4, and 6-7 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,716,380 to van Pottelsberghe de la Potterie.

More specifically, the Office Action states that Potterie reference discloses a method of making flavoring substances by reacting a protein hydrolysate containing soy protein, palmitic acid, methionine, lactic acid, water, xylose, and other substances at a temperature of 100° C (Column 3, Example 2). The Office Action further states that it would have been obvious to one skilled in the art to modify the teachings of the Potterie reference by conducting the process at a temperature of greater than 100°C and at a pressure above atmospheric pressure.

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The applicants respectfully disagree in two respects.

First, the applicants respectfully disagree with the assertion that the Potterie reference teaches the applicants' claimed method for manufacturing carboxylic acid and amino acid or amino acid condensate reaction products. The Potterie reference teaches a method of producing a water soluble beef flavoring agent which basically involves reacting a mono or polysaccharide with methionine in the presence of cystine or cysteine-free hydrolysed protein. In addition to these principle reactants, the reaction medium may also contain minor amounts (i.e., between 0.3 to 3.0% by weight of the reaction medium) of a carboxylic acid in order to contribute desirable flavor notes to the flavoring agent (see Col. 2, lines 23-32). The applicants respectfully point out that there is no teaching or suggestion in the Potterie reference that the carboxylic acid provided in the reaction medium is reacting with any of the amino acids therein, particularly in the manner disclosed in the claimed method. Indeed, there is no teaching or suggestion that the carboxylic acid is reacting with anything at all. Thus, the applicants respectfully assert that one skilled in the art would have no motivation whatsoever to modify the teachings of the Potterie reference to arrive at the claimed method. Should the Examiner believe that the Potterie reference inherently teaches a reaction between the carboxylic acid and an amino acid, or that one skilled in the art would know that this reaction is taking place, the applicants would respectfully request the Examiner to cite a reference in support of his position.

Second, the applicants respectfully disagree with the assertion that it would have been obvious to one skilled in the art to modify the teachings of the Potterie reference by conducting the process at a temperature of greater than 100°C and at a pressure higher than atmospheric pressure. Although it is generally true, as the Examiner pointed out, that temperature is well understood by those of ordinary skill in the art to be a result-effective

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variable, it is also true that an increase in temperature in an aqueous system beyond the boiling point (100° C) can result in the thermal destruction of the reactants and/or the desired end product, as well as result in side reactions that will produce undesirable by-products. This is of particular concern when producing food products (which the present invention is directed to), because these side reactions could potentially produce substances that are toxic to humans when ingested. Thus, one of ordinary skill in the art of food chemistry would not be motivated to simply increase the temperature and pressure of the reaction taught in the Potterie reference to arrive at the invention recited in claim 1, because that person would be well aware of these concerns. In sum, one of ordinary skill in the art would not be motivated to apply additional heat and pressure to the method disclosed in the Potterie reference to arrive at the present invention.

Thus, the applicants respectfully assert that one skilled in the art would have no motivation whatsoever to modify the teachings of the Potterie reference to arrive at the claimed method. In addition, because the Potterie reference does not render the method of independent claim 1 obvious, it can neither render the claims that are dependent thereon obvious. The applicants respectfully request that this rejection be withdrawn in view of the above comments and amendments.

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In view of the foregoing amendment and comments, applicants believe that the currently pending claims are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested. The Commissioner is hereby authorized to charge payment of any fees under 37 C.F.R. §1.17 which may become due in connection with this application to Deposit Account No. 19-2042.

Respectfully submitted,



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